

RAYTHEON COMPUTER

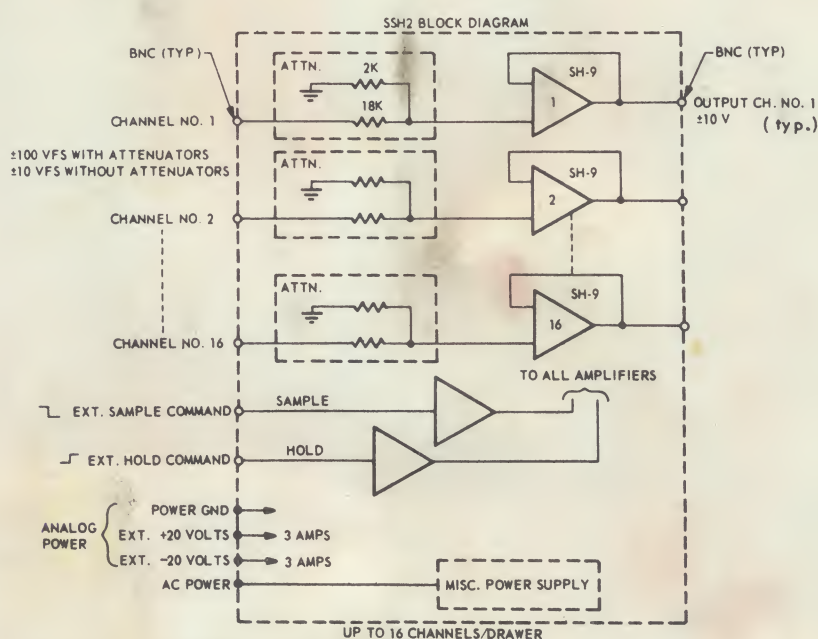
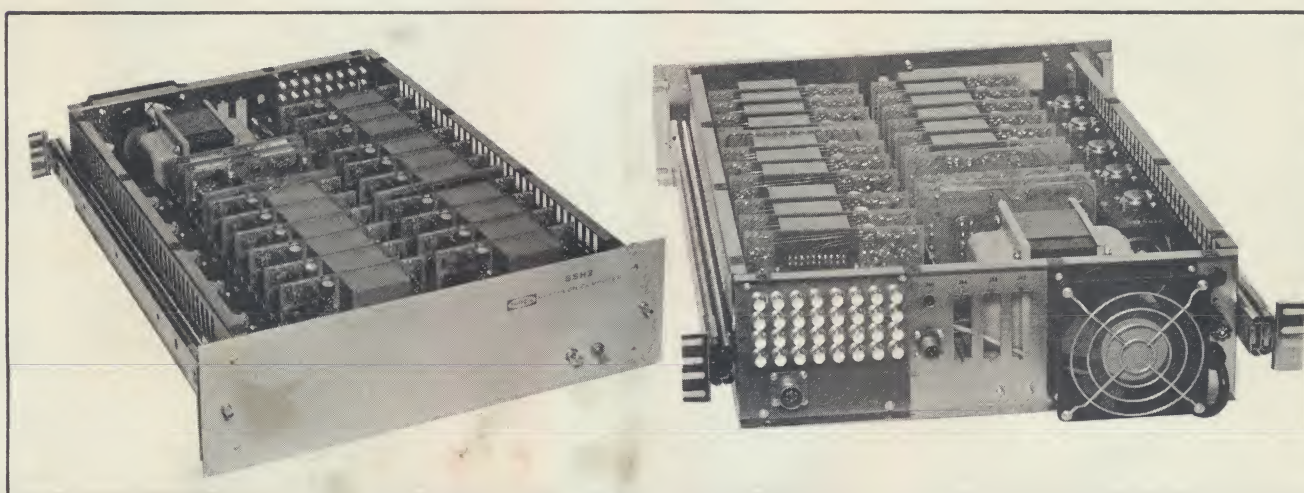
Technical Bulletin

SSH2 SIMULTANEOUS SAMPLE & HOLD SYSTEM

GENERAL DESCRIPTION

The SSH2 Simultaneous Sample and Hold System is designed to accept up to 16 channels of high level analog signals at ± 10 volts full scale (or ± 100 volts full scale). The system contains up to 16 Model SH-9 Sample and Hold Amplifiers and is intended for use in applications requiring simultaneous sampling of analog information. The SH-9 Amplifier is a high performance Track and Hold device offering accuracies of better than 0.01% and an aperture time of less than 50 nanoseconds.

The amplifiers, along with their associated logic power supplies and control logic, are packaged in a single 5 1/4 inch slide mounted drawer. The analog power supplies (± 20 volts) supplied on separate 5 1/4 inch panels are capable of driving 32 amplifiers (two SSH2 drawers).



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System Capacity	Expandable to 16 amplifiers	
Input Voltage	± 10 volts (w/o attenuators) ± 100 volts (w. attenuators)	
Input Impedance	100 Meg. ohms (w/c attenuators) 20K ohms (w. attenuators)	
Max. Source Impedance	2000 ohms	
Max. Overload	± 100% on 10 volt range ± 25% on 100 volt range	
Aperture Time	50 nanoseconds	
Settling Time	5.5 usec for Full Range to 0.01%	
Warm-up Time	10 minutes to rated accuracy	
Logic Levels	Binary "1" -6V. (min.)	Binary "0" 0V.

Control Lines	Sample Command - Triggers on negative edge Hold Command - Triggers on positive edge
Input Power	105 to 125 VAC, 50-60 HZ (Approx. 100 VA) +20V at 3 amps) -20V at 3 amps) for 16 amplifiers
Size	19" X 5 1/4" X 22 1/8" (See Fig. 4)
Weight	Approx. 50 pounds
Cooling	Internal muffin fan
Temperature Range	0 to 50°C
Analog Connector	BNC type
Digital Connector	Cannon type DD50P (mate)

Input Voltage Range.....	±10V
Max. Input Overvoltage	±20V (From Ground)
Max. Source Impedance	2K
Max. Output Load	2.5K and 150 pf
Control Signal Inputs	-10V to 15V Steps
Sample to Hold	Triggers on + Edge
Hold to Sample	Triggers on - Edge
Max. Rise Time	100 nSec.
Temperature Range	0°C to 50°C

Accuracy	
Gain and Linearity	$\pm 0.002\%$ F.S.
Gain and Linearity Stability	$\pm 0.002\%$ F.S.
Voltage Offset	adjustable to better than $\pm 50\mu\text{V}$
Voltage Offset Drift	$\pm 0.25\text{ mV}$
Voltage Offset Temperature Coef.	$\pm 30\mu\text{V}/^\circ\text{C}$
Current Offset (25°C)	$\pm 0.5\mu\text{A}$
Current Offset Drift	$\pm 0.1\mu\text{A}$
Current Offset Temperature Coef.	$\pm 0.01\mu\text{A}/^\circ\text{C}$
Noise	$75\mu\text{V RMS}$
Input Impedance/at DC	100 megohms min.
at 300 Kc	3 K ohms min.
Output Impedance	
at DC	5 milliohms max.
at 500 Kc	1 Ω max.

Settling Time	
from 25°C to 50°C	
up to 1V movement	
or 500 mV/μSec slope change	2.0 μ Sec max.
up to 10V movement	
or 2V/μSec slope change	4.5 μ Sec max.
up to 20V movement	5.0 μ Sec max.
from 0°C to 25°C	
up to 20V movement	5.5 μ Sec max.
Overvoltage Recovery Time	10 μ Sec max.

Aperture Time	50 nSec max.
Switching Step	
At zero	± 1 mv
Variation, over $\pm 10V$ Range	± 0.5 mv

Drop	
at 30°C.....	±1.0V/Sec. Typ.
at 50°C.....	±4.0V/Sec. max.
Memory	±0.005%

